

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Vialen, et al Serial No.: UNKNOWN  
Filed: CONCURRENT HERewith Docket No.: 930.339USW1  
Title: INTEGRITY CHECK IN A COMMUNICATION SYSTEM

CERTIFICATE UNDER 37 CFR 1.10

'Express Mail' mailing label number: EL887038794US

Date of Deposit: 10/10/01

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By:

Name: Kari Arnold

PRELIMINARY AMENDMENT

Box Patent Application  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Please enter the following preliminary amendment into the above-referenced application.

CLAIMS

Please amend claims 6-7, 9-10, 13-15 and 17-18 as follows. A clean copy of the amended claims is included below. A marked up copy of the entire claim set is included in Appendix A.

1. A method of communication between a first node and a second node, a plurality of different channels being provided between said first and second node, said method comprising the steps of:  
calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of

said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity; and transmitting information relating to the integrity output from one of said nodes to the other.

2. A method as claimed in claim 1, wherein a separate input is provided for said information relating to the identity of the channel.
3. A method as claimed in claim 1, wherein said information relating to the identity of the channel is combined with at least one other input value.
4. A method as claimed in claim 3, wherein said information relating to the identity of the channel is combined with only one other input value.
5. A method as claimed in claim 3, wherein said combined input value input comprises a first part allocated to the identity of the bearer and a second part allocated to the other information provided by said value.
6. (AMENDED) A method as claimed in claim 1, wherein said values input to said algorithm comprise one or more of the following values:  
an integrity key; a direction value, a fresh value, a message value and a count value.
7. (AMENDED) A method as claimed in claim 3, wherein said information relating to the identity of the bearer is combined with one or more of the following values input to said algorithm: a fresh value; a count value; an integrity key; a direction value and a message value.
8. A method as claimed in claim 7, wherein said message value is sent from one node to another without the channel identification information.

9. (AMENDED) A method as claimed in claim 1, wherein the output of the integrity algorithm is sent from one node to another.
10. (AMENDED) A method as claimed in claim 1, wherein communication between said first and second nodes is via a wireless connection.
11. A method as claimed in claim 10, wherein one of said first and second nodes is user equipment.
12. A method as claimed in claim 12, wherein said user equipment is a mobile station.
13. (AMENDED) A method as claimed in claim 10, wherein one of said first and second nodes is a radio network controller.
14. (AMENDED) A method as claimed in claim 10, wherein one of said first and second nodes is a node B.
15. (AMENDED) A method as claimed in claim 1, wherein said communication channels comprise a radio bearer.
16. A method as claimed in claim 15, wherein said radio bearer is a signalling radio bearer.
17. (AMENDED) A method as claimed in claim 1, wherein said input values are input to an algorithm for calculation said output.
18. (AMENDED) A method as claimed in claim 6, wherein the same integrity key is used for the different channels.

19. A method for carrying out an integrity check for an system comprising a first node and a second node, a plurality of communication channels being provided between said first node and said second node, said method comprising the step of calculating an integrity output using a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity.

20. A method of communication between a first node and a second node, a plurality of different channels being provided between said first and second node, said method comprising the steps of:

calculating an integrity output using a plurality of values, one of said values being an integrity key, each of said channels having a different integrity key; and transmitting information relating to the output of said integrity algorithms from one of said nodes to the other.

21. A method of communication between a first node and a second node, a plurality of different channels being provided between said first and second node, said method comprising:

triggering an authentication procedure; and

calculating a desired number of integrity parameters by the authentication procedure.

22. A node, said node for use in a system comprising a said node and a further node, a plurality of different channels being provided between said nodes, said node comprising means for calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity; and means for transmitting information relating to the integrity output from said node to said further node.

23. A node, said node for use in a system comprising said node and a further node, a plurality of different channels being provided between said nodes, said node comprising means for calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity; and means for comparing information relating to the integrity output calculated by said node with a value calculated by the further node.

24. An algorithm for calculating an integrity output for use in a system comprising a node and a further node, a plurality of different channels being provided between said nodes, said algorithm comprising means for calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity.

#### **REMARKS**

The above preliminary amendment is made to remove multiple dependencies from claims 6-7, 9-10, 13-15, 17-18 and reformatted for U.S. standards.

Applicant respectfully requests that this preliminary amendment be entered into the record prior to calculation of the filing fee and prior to examination and consideration of the above-identified application.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Applicant's attorney of record, Michael B. Lasky at 952-912-0523.

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Reg. No. 29,555  
MBL/blj

Parameter	Value	Unit
Initial concentration	1.0	g/L
Initial pH	7.0	
Temperature	25	°C
Time	0, 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, 1024, 2048, 4096, 8192, 16384, 32768, 65536, 131072, 262144, 524288, 1048576, 2097152, 4194304, 8388608, 16777216, 33554432, 67108864, 134217728, 268435456, 536870912, 1073741824, 2147483648, 4294967296, 8589934592, 17179869184, 34359738368, 68719476736, 137438953472, 274877906944, 549755813888, 1099511627776, 2199023255552, 4398046511104, 8796093022208, 17592186044416, 35184372088832, 70368744177664, 140737488355328, 281474976710656, 562949953421312, 1125899906842624, 2251799813685248, 4503599627370496, 9007199254740992, 18014398509481984, 36028797018963968, 72057594037927936, 144115188075855872, 288230376151711744, 576460752303423488, 1152921504606846976, 2305843009213693952, 4611686018427387904, 9223372036854775808, 18446744073709551616, 36893488147419103232, 73786976294838206464, 147573952589676412928, 295147905179352825856, 590295810358705651712, 1180591620717411303424, 2361183241434822606848, 4722366482869645213696, 9444732965739290427392, 18889465931478580854784, 37778931862957161709568, 75557863725914323419136, 151115727451828646838272, 302231454903657293676544, 604462909807314587353088, 1208925819614629174706176, 2417851639229258349412352, 4835703278458516698824704, 9671406556917033397649408, 19342813113834066795298816, 38685626227668133590597632, 77371252455336267181195264, 154742504910672534362390528, 309485009821345068724781056, 618970019642690137449562112, 1237940039285380274899124224, 2475880078570760549798248448, 4951760157141521099596496896, 9903520314283042199192993792, 19807040628566084398385987584, 39614081257132168796771975168, 79228162514264337593543950336, 158456325028528675187087900672, 316912650057057350374175801344, 633825300114114700748351602688, 1267650600228229401496703205376, 2535301200456458802993406410752, 5070602400912917605986812821504, 10141204801825835211973625643008, 20282409603651670423947251286016, 40564819207303340847894502572032, 81129638414606681695789005144064, 162259276829213363391578010288128, 324518553658426726783156020576256, 649037107316853453566312041152512, 1298074214633706907132624082305024, 2596148429267413814265248164610048, 5192296858534827628530496329220096, 10384593717069655257060992658440192, 20769187434139310514121985316880384, 41538374868278621028243970633760768, 83076749736557242056487941267521536, 166153499473114484112975882535043072, 332306998946228968225951765070086144, 664613997892457936451903530140172288, 1329227995784915872903807060280344576, 2658455991569831745807614120560689152, 5316911983139663491615228241121378304, 10633823966279326983230456482242756608, 21267647932558653966460912964485513216, 42535295865117307932921825928971026432, 85070591730234615865843651857942052864, 170141183460469231731687303715884105728, 340282366920938463463374607431768211456, 680564733841876926926749214863536422912, 1361129467683753853853498429727072845824, 2722258935367507707706996859454145691648, 5444517870735015415413993718908291383296, 10889035741470030830827987437816582766592, 21778071482940061661655974875633165533184, 43556142965880123323311949751266331066368, 87112285931760246646623899502532662132736, 174224571863520493293247799005065324265472, 348449143727040986586495598010130648530944, 696898287454081973172991196020261297061888, 1393796574908163946345982392040522594123776, 2787593149816327892691964784081045188247552, 5575186299632655785383929568162090376495104, 11150372599265311570767859136324180752990208, 22300745198530623141535718272648361505980416, 44601490397061246283071436545296723011960832, 89202980794122492566142873090593446023921664, 178405961588244985132285746181186892047843328, 356811923176489970264571492362373784095686656, 713623846352979940529142984724747568191373312, 1427247692705959881058285969449495136382746624, 2854495385411919762116571938898990272765493248, 5708990770823839524233143877797980545530986496, 11417981541647679048466287755595961091061972992, 2283596308329	

General Information	
Author(s)	W. J. G. Meijer, J. H. M. M. van der Wal, J. H. M. M. van der Wal, J. H. M. M. van der Wal
Title	Effect of the type of substrate on the growth of <i>Salmonella enteritidis</i> and <i>Salmonella typhimurium</i>
Journal	Journal of Food Protection
Volume	55
Issue	10
Pages	1000-1005
Year	1992
Keywords	Salmonella enteritidis, Salmonella typhimurium, growth, substrate, food preservation
Abstract	
The growth of <i>Salmonella enteritidis</i> and <i>Salmonella typhimurium</i> was studied on a variety of substrates. The substrates were: (1) a nutrient agar, (2) a nutrient agar with 0.5% NaCl, (3) a nutrient agar with 1.0% NaCl, (4) a nutrient agar with 1.5% NaCl, (5) a nutrient agar with 2.0% NaCl, (6) a nutrient agar with 2.5% NaCl, (7) a nutrient agar with 3.0% NaCl, (8) a nutrient agar with 3.5% NaCl, (9) a nutrient agar with 4.0% NaCl, (10) a nutrient agar with 4.5% NaCl, (11) a nutrient agar with 5.0% NaCl, (12) a nutrient agar with 5.5% NaCl, (13) a nutrient agar with 6.0% NaCl, (14) a nutrient agar with 6.5% NaCl, (15) a nutrient agar with 7.0% NaCl, (16) a nutrient agar with 7.5% NaCl, (17) a nutrient agar with 8.0% NaCl, (18) a nutrient agar with 8.5% NaCl, (19) a nutrient agar with 9.0% NaCl, (20) a nutrient agar with 9.5% NaCl, (21) a nutrient agar with 10.0% NaCl, (22) a nutrient agar with 10.5% NaCl, (23) a nutrient agar with 11.0% NaCl, (24) a nutrient agar with 11.5% NaCl, (25) a nutrient agar with 12.0% NaCl, (26) a nutrient agar with 12.5% NaCl, (27) a nutrient agar with 13.0% NaCl, (28) a nutrient agar with 13.5% NaCl, (29) a nutrient agar with 14.0% NaCl, (30) a nutrient agar with 14.5% NaCl, (31) a nutrient agar with 15.0% NaCl, (32) a nutrient agar with 15.5% NaCl, (33) a nutrient agar with 16.0% NaCl, (34) a nutrient agar with 16.5% NaCl, (35) a nutrient agar with 17.0% NaCl, (36) a nutrient agar with 17.5% NaCl, (37) a nutrient agar with 18.0% NaCl, (38) a nutrient agar with 18.5% NaCl, (39) a nutrient agar with 19.0% NaCl, (40) a nutrient agar with 19.5% NaCl, (41) a nutrient agar with 20.0% NaCl, (42) a nutrient agar with 20.5% NaCl, (43) a nutrient agar with 21.0% NaCl, (44) a nutrient agar with 21.5% NaCl, (45) a nutrient agar with 22.0% NaCl, (46) a nutrient agar with 22.5% NaCl, (47) a nutrient agar with 23.0% NaCl, (48) a nutrient agar with 23.5% NaCl, (49) a nutrient agar with 24.0% NaCl, (50) a nutrient agar with 24.5% NaCl, (51) a nutrient agar with 25.0% NaCl, (52) a nutrient agar with 25.5% NaCl, (53) a nutrient agar with 26.0% NaCl, (54) a nutrient agar with 26.5% NaCl, (55) a nutrient agar with 27.0% NaCl, (56) a nutrient agar with 27.5% NaCl, (57) a nutrient agar with 28.0% NaCl, (58) a nutrient agar with 28.5% NaCl, (59) a nutrient agar with 29.0% NaCl, (60) a nutrient agar with 29.5% NaCl, (61) a nutrient agar with 30.0% NaCl, (62) a nutrient agar with 30.5% NaCl, (63) a nutrient agar with 31.0% NaCl, (64) a nutrient agar with 31.5% NaCl, (65) a nutrient agar with 32.0% NaCl, (66) a nutrient agar with 32.5% NaCl, (67) a nutrient agar with 33.0% NaCl, (68) a nutrient agar with 33.5% NaCl, (69) a nutrient agar with 34.0% NaCl, (70) a nutrient agar with 34.5% NaCl, (71) a nutrient agar with 35.0% NaCl, (72) a nutrient agar with 35.5% NaCl, (73) a nutrient agar with 36.0% NaCl, (74) a nutrient agar with 36.5% NaCl, (75) a nutrient agar with 37.0% NaCl, (76) a nutrient agar with 37.5% NaCl, (77) a nutrient agar with 38.0% NaCl, (78) a nutrient agar with 38.5% NaCl, (79) a nutrient agar with 39.0% NaCl, (80) a nutrient agar with 39.5% NaCl, (81) a nutrient agar with 40.0% NaCl, (82) a nutrient agar with 40.5% NaCl, (83) a nutrient agar with 41.0% NaCl, (84) a nutrient agar with 41.5% NaCl, (85) a nutrient agar with 42.0% NaCl, (86) a nutrient agar with 42.5% NaCl, (87) a nutrient agar with 43.0% NaCl, (88) a nutrient agar with 43.5% NaCl, (89) a nutrient agar with 44.0% NaCl, (90) a nutrient agar with 44.5% NaCl, (91) a nutrient agar with 45.0% NaCl, (92) a nutrient agar with 45.5% NaCl, (93) a nutrient agar with 46.0% NaCl, (94) a nutrient agar with 46.5% NaCl, (95) a nutrient agar with 47.0% NaCl, (96) a nutrient agar with 47.5% NaCl, (97) a nutrient agar with 48.0% NaCl, (98) a nutrient agar with 48.5% NaCl, (99) a nutrient agar with 49.0% NaCl, (100) a nutrient agar with 49.5% NaCl, (101) a nutrient agar with 50.0% NaCl, (102) a nutrient agar with 50.5% NaCl, (103) a nutrient agar with 51.0% NaCl, (104) a nutrient agar with 51.5% NaCl, (105) a nutrient agar with 52.0% NaCl, (106) a nutrient agar with 52.5% NaCl, (107) a nutrient agar with 53.0% NaCl, (108) a nutrient agar with 53.5% NaCl, (109) a nutrient agar with 54.0% NaCl, (110) a nutrient agar with 54.5% NaCl, (111) a nutrient agar with 55.0% NaCl, (112) a nutrient agar with 55.5% NaCl, (113) a nutrient agar with 56.0% NaCl, (114) a nutrient agar with 56.5% NaCl, (115) a nutrient agar with 57.0% NaCl, (116) a nutrient agar with 57.5% NaCl, (117) a nutrient agar with 58.0% NaCl, (118) a nutrient agar with 58.5% NaCl, (119) a nutrient agar with 59.0% NaCl, (120) a nutrient agar with 59.5% NaCl, (121) a nutrient agar with 60.0% NaCl, (122) a nutrient agar with 60.5% NaCl, (123) a nutrient agar with 61.0% NaCl, (124) a nutrient agar with 61.5% NaCl, (125) a nutrient agar with 62.0% NaCl, (126) a nutrient agar with 62.5% NaCl, (127) a nutrient agar with 63.0% NaCl, (128) a nutrient agar with 63.5% NaCl, (129) a nutrient agar with 64.0% NaCl, (130) a nutrient agar with 64.5% NaCl, (131) a nutrient agar with 65.0% NaCl, (132) a nutrient agar with 65.5% NaCl, (133) a nutrient agar with 66.0% NaCl, (134) a nutrient agar with 66.5% NaCl, (135) a nutrient agar with 67.0% NaCl, (136) a nutrient agar with 67.5% NaCl, (137) a nutrient agar with 68.0% NaCl, (138) a nutrient agar with 68.5% NaCl, (139) a nutrient agar with 69.0% NaCl, (140) a nutrient agar with 69.5% NaCl, (141) a nutrient agar with 70.0% NaCl, (142) a nutrient agar with 70.5% NaCl, (143) a nutrient agar with 71.0% NaCl, (144) a nutrient agar with 71.5% NaCl, (145) a nutrient agar with 72.0% NaCl, (146) a nutrient agar with 72.5% NaCl, (147) a nutrient agar with 73.0% NaCl, (148) a nutrient agar with 73.5% NaCl, (149) a nutrient agar with 74.0% NaCl, (150) a nutrient agar with 74.5% NaCl, (151) a nutrient agar with 75.0% NaCl, (152) a nutrient agar with 75.5% NaCl, (153) a nutrient agar with 76.0% NaCl, (154) a nutrient agar with 76.5% NaCl, (155) a nutrient agar with 77.0% NaCl, (156) a nutrient agar with 77.5% NaCl, (157) a nutrient agar with 78.0% NaCl, (158) a nutrient agar with 78.5% NaCl, (159) a nutrient agar with 79.0% NaCl, (160) a nutrient agar with 79.5% NaCl, (161) a nutrient agar with 80.0% NaCl, (162) a nutrient agar with 80.5% NaCl, (163) a nutrient agar with 81.0% NaCl, (164) a nutrient agar with 81.5% NaCl, (165) a nutrient agar with 82.0% NaCl, (166) a nutrient agar with 82.5% NaCl, (167) a nutrient agar with 83.0% NaCl, (168) a nutrient agar with 83.5% NaCl, (169) a nutrient agar with 84.0% NaCl, (170) a nutrient agar with 84.5% NaCl, (171) a nutrient agar with 85.0% NaCl, (172) a nutrient agar with 85.5% NaCl, (173) a nutrient agar with 86.0% NaCl, (174) a nutrient agar with 86.5% NaCl, (175) a nutrient agar with 87.0% NaCl, (176) a nutrient agar with 87.5% NaCl, (177) a nutrient agar with 88.0% NaCl, (178) a nutrient agar with 88.5% NaCl, (179) a nutrient agar with 89.0% NaCl, (180) a nutrient agar with 89.5% NaCl, (181) a nutrient agar with 90.0% NaCl, (182) a nutrient agar with 90.5% NaCl, (183) a nutrient agar with 91.0% NaCl, (184) a nutrient agar with 91.5% NaCl, (185) a nutrient agar with 92.0% NaCl, (186) a nutrient agar with 92.5% NaCl, (187) a nutrient agar with 93.0% NaCl, (188) a nutrient agar with 93.5% NaCl, (189) a nutrient agar with 94.0% NaCl, (190) a nutrient agar with 94.5% NaCl, (191) a nutrient agar with 95.0% NaCl, (192) a nutrient agar with 95.5% NaCl, (193) a nutrient agar with 96.0% NaCl, (194) a nutrient agar with 96.5% NaCl, (195) a nutrient agar with 97.0% NaCl, (196) a nutrient agar with 97.5% NaCl, (197) a nutrient agar with 98.0% NaCl, (198) a nutrient agar with 98.5% NaCl, (199) a nutrient agar with 99.0% NaCl, (200) a nutrient agar with 99.5% NaCl, (201) a nutrient agar with 100.0% NaCl, (202) a nutrient agar with 100.5% NaCl, (203) a nutrient agar with 101.0% NaCl, (204) a nutrient agar with 101.5% NaCl, (205) a nutrient agar with 102.0% NaCl, (206) a nutrient agar with 102.5% NaCl, (207) a nutrient agar with 103.0% NaCl, (208) a nutrient agar with 103.5% NaCl, (209) a nutrient agar with 104.0% NaCl, (210) a nutrient agar with 104.5% NaCl, (211) a nutrient agar with 105.0% NaCl, (212) a nutrient agar with 105.5% NaCl, (213) a nutrient agar with 106.0% NaCl	

1. A method of communication between a first node and a second node, a plurality of different channels being provided between said first and second node, said method comprising the steps of:  
calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity; and  
transmitting information relating to the integrity output from one of said nodes to the other.
2. A method as claimed in claim 1, wherein a separate input is provided for said information relating to the identity of the channel.
3. A method as claimed in claim 1, wherein said information relating to the identity of the channel is combined with at least one other input value.
4. A method as claimed in claim 3, wherein said information relating to the identity of the channel is combined with only one other input value.
5. A method as claimed in claim 3, wherein said combined input value input comprises a first part allocated to the identity of the bearer and a second part allocated to the other information provided by said value.
6. (AMENDED) A method as claimed in [any preceding] claim 1, wherein said values input to said algorithm comprise one or more of the following values: an integrity key; a direction value, a fresh value, a message value and a count value.
7. (AMENDED) A method as claimed in claim 3 [or 5 and 6], wherein said information relating to the identity of the bearer is combined with one or more of the following values input to said algorithm: [said] a fresh value; [said] a count value; an [said] integrity key; [said] a direction value and [said] a message value.
8. A method as claimed in claim 7, wherein said message value is sent from one node to another without the channel identification information.
9. (AMENDED) A method as claimed in [any preceding] claim 1, wherein the output of the integrity algorithm is sent from one node to another.
10. (AMENDED) A method as claimed in [any preceding] claim 1, wherein communication between said first and second nodes is via a wireless connection.





22. A node, said node for use in a system comprising a said node and a further node, a plurality of different channels being provided between said nodes, said node comprising means for calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity; and means for transmitting information relating to the integrity output from said node to said further node.

23. A node, said node for use in a system comprising said node and a further node, a plurality of different channels being provided between said nodes, said node comprising means for calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity; and means for comparing information relating to the integrity output calculated by said node with a value calculated by the further node.

24. An algorithm for calculating an integrity output for use in a system comprising a node and a further node, a plurality of different channels being provided between said nodes, said algorithm comprising means for calculating an integrity output, said integrity output being calculated from a plurality of values, some of said values being the same for said different channels, at least one of said values being arranged to comprise information relating to the identity of said channel, each channel having a different identity.